REMARKS

This amendment is in response to the Office Action dated September 5, 2002. Claim 6 has been amended to correct minor informalities. No new matter has been added. Claims 1-3, 6-9 and 11-32 are pending.

In view of the above amendments and following remarks, the applicant respectfully requests withdrawal of each of the rejections and allowance of the application.

Claim Objections

Claim 6 has been objected to because of various informalities, and consequently has been amended along the lines suggested by the Examiner. In particular, we have amended claim 6 to more appropriately depend from claim 3 rather than claim 5.

Claim Rejections – 35 USC § 103

Claims 1-2 and 11-12 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over US Patent 5,950,203 ("the Stakuis patent") and in further view of US Patent 5,64,972 ("the Crouse patent"). The Examiner acknowledges that the Stakuis patent fails to include the step of reading a formal description of the file system by said client from said disc storage device, wherein said client can read and write data to and from said disc storage device without requiring further knowledge of said file system. However, the Examiner argues that the Crouse patent discloses this feature and that a person skilled in the art would have been motivated to modify Stakuis' system to allow reading a "formal description" to allow storage and retrieval of large volumes of data across multiple types of secondary storage. We disagree.

We submit that the Crouse patent does not teach or suggest a "formal description of a file system" nor provide a client with the ability to read the "formal description of the file system from the disc storage" as recited in claim 1.

Rather, as recognized by the Examiner, the Crouse patent discloses an archiving file system that uses a "flexible control structure that is used for storing control information about the remote files as part of an addressable control file that has space on the data server." (See column 4, lines 45-53; FIG. 12) Referring to FIG. 2 of the Crouse patent, a file control program (40)

controls devices (46, 48) and both the program and the devices are coupled together on a server 14. The program 40 handles file requests normally made by the OS 20, thus there may be no need to the modify the standard file system program 24 stored at user node 10 on the network. (See column 8, lines 26-42) Although the techniques show a control structure and corresponding program that may manage the storage of and access to remote files, these techniques do not teach or suggest "reading a formal description of the file system by said client from said disc storage device, wherein said client can read and write data to and from said disc storage device without requiring further knowledge of said file system" as recited in claim 1.

The techniques of the Crouse patent are directed to a file structure for use in an archiving file system that is fixed or tightly coupled to a server. For example, in the Crouse patent, the information and file structure are directed to files related to an archiving file system and contains information related to archiving files (e.g. hierarchically selected archival file attributes and an archival bock pointer). In fact, in the Crouse patent, a "standard file control program" (as shown in FIG. 1, labeled prior art) was replaced with an "archiving file system (AFS) control program" (as shown in FIG. 2) to handle functions related to archiving. The techniques of the Crouse patent indicate that it created a new file structure and control program fixed to a server to handle archiving functions without mentioning any mechanism for transferring such structure to a client over a network.

Moreover, in the Crouse patent, a file request generated by a client is channeled and processed by the server 14 because it contains the file control program 40 that controls access to the files in the devices 46, 48. Indeed, the Crouse patent found it necessary to provide a structure and program to control the devices 46, 48 used for storing files on a server. As a result, the server must process a request from a client in the Crouse structure, whereas in the current application, a client reads a "formal description of a file system" so that the client can directly access a storage means without requiring further knowledge of the file system or the use of an intervening server. Thus, the Crouse patent fails to teach or suggest having a client read "a formal description of the file system by said client from said disc storage device, wherein said client can read and write data to and from said disc storage device without requiring further knowledge of said file system" as recited in claim 1.

We submit, therefore, that neither the Stakuis patent nor the Crouse patent describe or suggest the invention recited in claim 1. Nor do the references disclose systems that provide the advantages of the claimed invention. For example, in one embodiment, a client reads a formal description of a file system directly from the disk (step 3) and saves this description for use in the future. (See page 12, lines 2-4 of the application; FIG. 5) For example, when a read request (step 4) or a write request (step 5) occurs, the client uses the formal description to interpret the file system and to read/write data directly to the disk. (See page 12, lines 4-6 of the application) These techniques may provide various advantages, such as, permitting file system utility programs to be made independent of the file system type by using the file system's formal description. (See page 13, line 9 to page 14, line 10 of the application)

Moreover, the Stakuis patent, as mentioned below, fails to teach or suggest a "description of a file system" or providing a client with the ability to acquire such a description as recited in claim 16. (See 35 U.S.C. § 102 rejection below) The Examiner recognized that the Stakuis patent fails to teach or suggest "reading a formal description of the file system by said client from said disc storage device, wherein said client can read and write data to and from said disc storage device without requiring further knowledge of said file system" as recited in claim 1. In view of the above remarks, it would not have been obvious to one skilled in the art to modify the teachings of Stakuis to derive the claimed invention.

Thus, the cited references, alone or in combination, fail to teach or suggest the invention as recited in claim 1. Thus, the applicant respectfully requests withdrawal of the 35 U.S.C. § 103(a) rejections of claim 1 and dependent claim 2.

Claim 11 recites a system that includes a client configured to perform the method of claim 1. For the reasons explained above, claim 1 is distinct from the prior art. Thus, the applicant respectfully requests withdrawal of the 35 U.S.C. § 103(a) rejections of claim 11 as well as dependent claim 12.

Claims 3, 6-9 and 13-15 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the Stakuis patent in view of the Crouse patent as applied to claims 1, 11 and 2, 12, and further in view Bach. As explained above, claim 1 and 11 is distinct from the prior art references. Thus, dependent claims 3, 6-9 and 13-15 should be allowable for at least the same reasons.

In light of the above remarks, the applicant respectfully requests withdrawal of the 35 U.S.C. §103(a) rejections of claims 1-2, 6-9, 11-12 and 13-15.

Claim Rejections – 35 USC § 102

Claims 16-32 have been rejected under 35 U.S.C. §102(a) as being allegedly anticipated by US Patent 5,950,203 ("the Stakuis patent").

Claim 16 of the present invention recites a method of reading or writing data from a storage means that includes:

> acquiring a **description of a file system** associated with a storage resource; and
>
> reading or writing **directly** to the storage resource based on the description.

As explained above, a client reads a formal description of a file system directly from the disk and the client uses the description to interpret the file system to read/write data directly to the disk.

The Stakuis patent discloses a method that includes a bypass mechanism which executes on a first node and the mechanism intercedes in response to at least selected input/output, or access, requests generated by that node. (See FIG. 1 and column 2, lines 43-45) The bypass mechanism allows data to be transferred between the first node and the peripheral device over a third communications path. (See column 2, lines 45-50) Such transfers are made using administrative information maintained by the file system relating to the storage of such data on the peripheral data. (See column 2, lines 50-52) However, the administrative information includes file mappings governing the physical location at which the data is stored on the peripheral device and are obtained from the second node. (See column 2, lines 59-61) The first node acquires the administrative information by applying further requests to the server. For example, the first node issues two requests: a first request causes the information to be retrieved into an actual or virtual ("ghost") file local to the second node, and a second request by the first node causes the information to be transferred over the network to the first node. (See column 2, lines 67 to column 3, line 4)

Such administrative information is **not** equivalent to "a description of a file system associated with a storage resource" as recited on claim 16. In the current invention, the

description of the file system provides more than just information related to each file. For example, the description of a file system as recited in claim 16 does not require the client to change as the file system format changes, because the formal description that is stored in the disk will change as the file system changes. (See page 11, lines 21-23 of the application) The description of the file system also allows the client to access data from the disc resource without further knowledge of the file system. (See claim 1 of the present invention) As a result, system performance may be improved. In contrast, the information mentioned in the Stakuis patent relates to file mappings and **not** "a description of a file system associated with a storage resource" as recited on claim 16.

In the Stakuis patent, the information associated with each file is read from the server requiring the first node to issue at least two requests to acquire such information. (See column 3, lines 1-3) As a result, the techniques of the Stakuis patent require the client node to issue additional requests for each file reducing system performance, whereas, in the present invention system performance is improved because the first node acquires the description of the file system without requiring additional requests from the server. Thus, in the Stakuis patent, the first node acquires information associated with file mappings of **an individual file** requested by the first node and not a **description of a file system** associated with a storage resource as recited in claim 16. The applicant respectfully asserts that the cited references fail to teach or suggest "acquiring a description of a file system associated with a storage resource, and reading or writing directly to the storage resource based on the description" as recited in claim 16.

Moreover, the techniques of the Stakuis patent fail to teach or suggest "reading or writing **directly** to the storage resource based on the description" as recited in claim 16, because Stakuis requires participation of the server to interpret the file system format. For example, in the Stakuis patent, the server intercepts a request for a file from a client and sends the client a file mapping which the client stores for later read/write operations. (See column 10, lines 9-23) Then a client filter driver 66 intercepts a read request to determine if the read request is directed to a file for which mapping information is available. (See column 10, lines 25-49) That is, the Stakuis patent provides a file mapping that requires additional information and process steps to fulfill read/write requests. In contrast, the client in the present invention reads the description of the file system from the disk directly and then uses the description to read/write data directly

from/to the disk. (See page 12, lines 1-6 of the application). Thus, the Stakuis patent fails to teach or suggest "reading or writing directly to the storage resource based on the description" as recited in claim 16.

Thus, claim 16 is not anticipated by the cited reference. Since claims 17-19 depend directly or indirectly on claim 16, they should be allowable for at least the same reasons

Claim 20 recites an apparatus configured to perform the method of claim 16. As explained above, claim 16 is distinct from the prior art. In view of the above remarks, the applicants respectfully request withdrawal of the 35 U.S.C. § 102(a) rejections of claim 20 as well as dependent claims 21-24.

Likewise, claim 25 recites an article that includes instructions for performing the method of claim 16. As explained above, claim 16 is distinct from the prior art. In view of the above remarks, the applicants respectfully request withdrawal of the 35 U.S.C. § 102(a) rejections of claim 25 as well as dependent claims 26-27.

Similarly, claim 28 recites a system that includes a client configured to perform the method of claim 16. As explained above, claim 16 is distinct from the prior art. In view of the above remarks, the applicants respectfully request withdrawal of the 35 U.S.C. § 102(a) rejections of claim 28 as well as dependent claims 29-32.

In light of the above remarks, the applicant respectfully requests withdrawal of the 35 U.S.C. §102(a) rejections of claims 16-32.

The prior art of record

The prior art of record but not relied upon has not been discussed herein as those references have not been applied to any of the claims

Attached is a marked-up version of the changes being made by the current amendment.

Applicant asks that all claims be allowed. Enclosed is a check for a Petition for a One-month Extension of Time fee. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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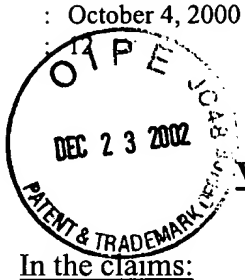

Version with markings to show changes made

In the claims:

Claim 6 has been amended as follows:

6. (Twice Amended) The method of claim [5] 3 wherein step a. comprises the steps of:

sending a mount request; and[,]

receiving a mount response.